

Claims

1. An apparatus (10, 12, 14) for use in an industrial process in which for communicating data and control signals it is connected to a central control unit (18) via a bus (16), characterized in that in said apparatus (10, 12, 14) a software apparatus model (20, 22, 24) is memorized which contains a comprehensive mimic image of said apparatus including its parameters, functionality and sequence programs.
2. The apparatus as set forth in claim 1, characterized in that said apparatus model (20, 22, 24) is formulated in a uniform program language with which said functionality and said parameters of said apparatus (10, 12, 14) can be explicitly simulated.
3. The apparatus as set forth in claim 1 or 2, characterized in that said apparatus model (20, 22, 24) is memorized in a version permitting optimum use to be made of the available memory capacity in said apparatus (10, 12, 14).
4. The apparatus as set forth in any of the claims 1 to 3, characterized in that said apparatus model (20, 22, 24) is modifiable by means of a software program.
5. The apparatus as set forth in any of the preceding claims, characterized in that the access for reading and writing said apparatus model (20, 22, 24) is made possible by means of a software program.
6. The apparatus as set forth in claim 5, characterized in that access authorization to said software program for reading and writing is configurable.

7. The apparatus as set forth in any of the preceding claims, characterized in that said access authorization is configurable on said apparatus model (20, 22, 24).

8. The apparatus as set forth in any of the preceding claims, characterized in that said apparatus model (20, 22, 24) is memorizable on a data carrier and usable by a software program.

9. A plant including several apparatuses (10, 12, 14) as set forth in any of the claims 1 to 8, connected to a central control unit (18) via a bus (16), characterized in that said apparatus models (20, 22, 24) are loadable into said control unit (18), that in said control unit (18) a software program is provided with the aid of which in using said loaded apparatus models (20', 22', 24') the operation of said plant can be simulated for testing it in including all parameters and functionalities contained in said apparatus models (20', 22', 24').

10. The plant as set forth in claim 9, characterized in that said apparatus models (20', 22', 24') are modifiable by said central control unit (18) depending on the result of simulation.

11. A method of simulating the operation of a plant as set forth in claim 9 or 10, characterized by it comprising the steps of loading apparatus models (20', 22', 24') of said apparatuses (10, 12, 14) to be employed in said plant into said central control unit (18) and simulating the operation of said plant in including all parameters and functionalities contained in said apparatus models (20', 22', 24') by means of a software program sequenced in said control unit (18).

12. The method as set forth in claim 11, characterized by ~~modifying said apparatus models (20, 22, 24) by said central control unit (18) as a function of the result of simulation.~~

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